

A Rare Presentation of Spinal Cord Tuberculosis: A Case Study

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Abstract

Intramedullary spinal cord tubercular abscess is a rare entity which is more rare with syrinx with whole spinal cord involvement. Our patient was also presented with hollow cord intramedullary tubercular abscess so the patient was treated by complete thoracic and lumbar spinal laminectomy. Tissue biopsy showed acid-fast bacilli positive hence started Category (CAT 1) anti-tuberculosis treatment (ATT). Later patient developed basal meningitis with obstructive hydrocephalus for which ventriculoperitoneal shunt was done. The Objective of this case report is to present the rare presentation of spinal tuberculosis, so that early diagnosis can be made and treatment can be started as early as possible. This patient underwent clinical, biochemical, and radiological investigation and diagnosed as spinal tuberculosis with typical radiological features. Patient is treated with dorsal lumbar laminectomy and Abscess drainage along with CAT 1 ATT. Tuberculosis has a wide spectrum of presentation among which intramedullary spinal tuberculosis is one of the rare forms of presentation in which multilevel laminectomy and abscess drainage is an option can be considered.

Key words: Infection, Spinal cord, Tuberculosis

INTRODUCTION

Tuberculosis is the common cause of infectious disease affecting upto one-third of worlds population.^[1] Of all the patient with tuberculosis, nearly 1–3% has the involvement of the skeletal system. Spinal tuberculosis is a form of skeletal tuberculosis and reported up to 50% involvement.^[2-4] Tuberculosis of the spine is most common in India. Spinal tuberculosis is most common in the first three decades of life.^[5-7] It can occur in any age and affect both sexes equally. In recent decades, there is abolishing of tuberculosis in developed countries. Moreover, there is shift in the incidence of tuberculosis in older age group in developed nations.^[8] The pattern of the disease in developed countries is different from developing countries.^[9] In developed countries, the tuberculosis occurs

in the urban population and in older age group, and in developing countries it is occur in the younger age group. Intramedullary spinal cord tubercular abscess is a rare entity which is more rare with syrinx with whole spinal cord involvement.^[10,11] Few cases were documented in the literature. Here, we are presenting a case of hollow cord intramedullary tubercular abscess.

CASE REPORT

A 2-year-old male patient presented with a history of loss of weight and evening rise of temperature along with lethargic activity for the past 3 months which was followed by gradual onset of the paucity of both lower limbs for past 10 days. Parents gave the history of repeated fell down while walking started recently which he could do normally before. The paucity of both lower limbs gradually worsen and became bedridden which was followed by paucity of both upper limbs. He was taken to government medical college where thorough examination, blood investigation, and radiological investigation were done. He was diagnosed as extensive spinal cord abscess. He was planned for abscess drainage. Extensive thoracolumbar laminectomy and abscess drainage done

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and send for biopsy. Biopsy reported as tuberculous etiology. Post-operative period was uneventful and started on anti-tuberculosis treatment (ATT) Category (CAT 1) and discharged. Following operation and ATT the patient was improving slowly. His paucity of both upper limbs improved to some extent, but lower limbs were not. After some days patient develops altered sensorium, excessive crying, and vomiting. Again he was taken to the same hospital where he was diagnosed to have hydrocephalus and hence ventriculoperitoneal shunt was done. Patient improved well and discharged. After 2 months patient develops paravertebral swelling so the parents presented to our department of neurosurgery. Here patient was investigated with magnetic resonance imaging (MRI) spine with contrast and computed tomography (CT) spine. The radiological imaging shows no paravertebral soft tissue swelling without any significant cord compromise. Patient as planned for conservative treatment with CAT 1 ATT and asked for regular followup.

DISCUSSION

Intramedullary spinal cord tubercular abscess is a rare entity which is more rare with syrinx with whole spinal cord involvement.^[10,11] Spinal tuberculosis is mostly secondary to pulmonary tuberculosis. This is usually seen in children and is more common in male patients. A total of 40% of the abscesses occur in the first two decades with 27% occurring before the age of 10 years.^[12] Most common location is the thoracic region. It can be focal or multiple or extensive involvements of the cord.^[10,12] Spinal tuberculosis is less common than cranial tuberculosis due to its peculiarity of blood supply and lower volume of the spinal cord. Our patient also presented with hollow cord intramedullary tubercular abscess followed by the development of basal meningitis with obstructive hydrocephalus for which ventriculoperitoneal shunt was done. Patient may present with systemic symptoms, back pain, neurological deficit.

Diagnosis usually confirmed by tissue biopsy but most of the time culture sterile.^[13] Hence, radiological investigation mostly MRI though not conclusive but is very sensitive in diagnosis of tubercular abscess. In our case, MRI showed multiple mixed intense septed lesion involving thoracolumbar spinal cord with syringomyelia in the cervical region on T2 with leptomeningeal enhancement in the cervical cord, expansion of spinal cord with intramedullary multiple peripherally enhancing lesion with central diffusion of restriction suggestive of tubercular abscess on contrast.

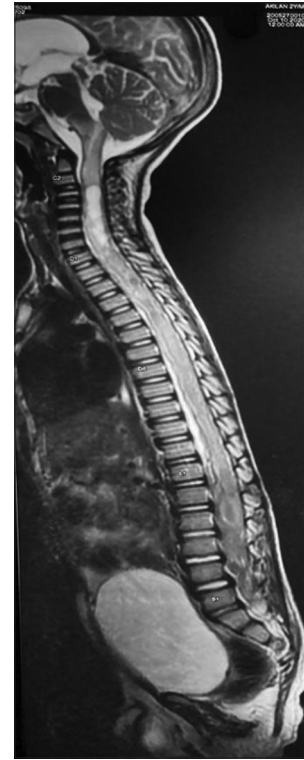


Figure 1: T2 sagittal section shows Multiple mixed intense septed lesion involving thoracolumbar spinal cord with syringomyelia in cervical region

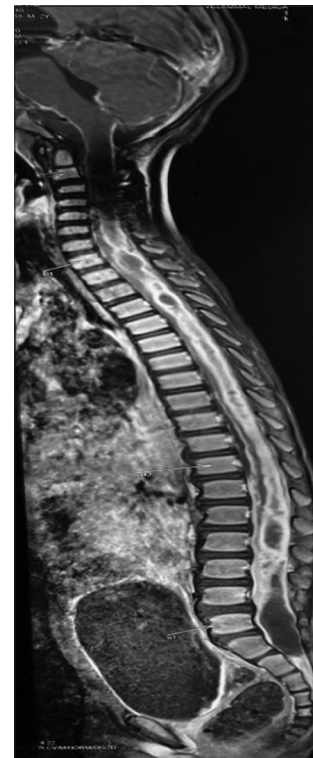


Figure 2: Post contrast T1 shows leptomeningeal enhancement in cervical cord, expansion of spinal cord with intramedullary multiple peripherally enhancing lesion with central diffusion of restriction suggestive of tubercular abscess

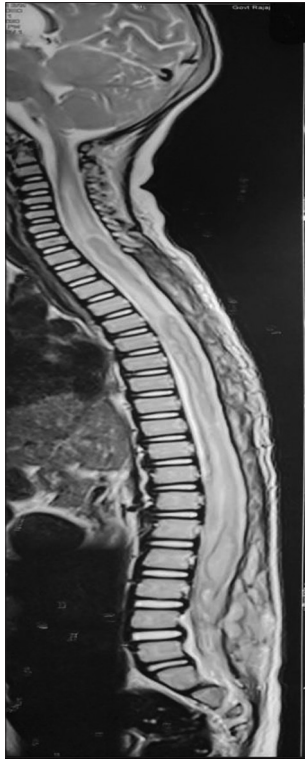


Figure 3: Post op T2 sagittal section shows complete thoracolumbar laminectomy with improvement of syrinx

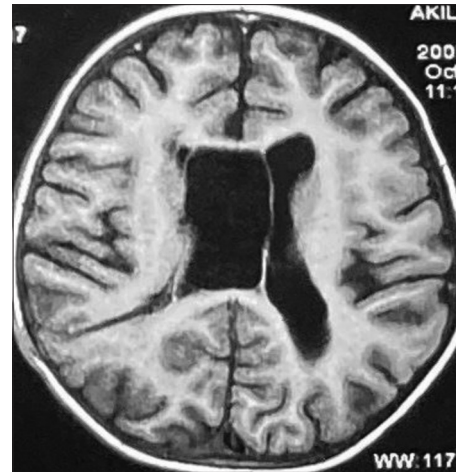


Figure 5: Magnetic resonance imaging T1 axial cuts shows post op right VP shunt

CONCLUSION

Intramedullary spinal cord tuberculosis is a rare entity so high index of suspicion is necessary to diagnosis of tuberculosis. In time appropriate treatment is utmost important whether chemotherapy or surgery in the form of laminectomy, single level, or multiple level depending upon the extent of lesion and drainage of abscess. Patient follow-up is also is equally important for the treatment of its sequelae.

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Tuberculosis is a very common presentation in India. Vertebral body tumors are also very common presentation. This is a case to show a rare presentation of spinal cord Tuberculosis.

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Figure 4: (a and b) Shows patient with quadriparesis and post op midline scar on back

In literature patient presented with diagnosis of intramedullary spinal cord tubercular abscess treated with chemotherapy ATT alone and some cases surgery too, showed improving result. In our case since the patient develop neurological deficit with extensive spinal cord involvement. Hence, patient was operated by complete thoracic and lumbar spinal laminectomy which was followed by CAT 1 ATT after confirmation of tuberculous etiology by tissue biopsy. Patient showed initial period of some improvement but later he developed basal meningitis with obstructive hydrocephalus. He was treated with a right ventriculoperitoneal shunt [Figures 1-5].

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